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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/822,839

04/13/2004

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03/19/2007

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EXAMINER

BHAT, NINA NMN

ART UNIT

PAPER NUMBER

1764

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/822,839

Applicant(s)

TONKOVICH ET AL.

Examiner

N. Bhat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5,7-11 and 46-85 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-11,46-59 and 61-85 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 5,7-11 and 46-85 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 09/492,950 and 09/123, 781 as follows: Applicant is required to update the status of these applications, i.e., if these applications are now patents or abandoned etc. Applicant has made reference to number of applications and has left blanks as to the status and whether these applications are incorporated by reference. Note specifically Page 9, lines 22-31. Applicant should update the continuity/status and complete the information and should not leave blanks in the specification. A suitable correction is required.
2. Applicant's election without traverse of Group II, claims 8-11, 46-59 and 61-85 in the reply filed on January 8, 2007 is acknowledged. Claims 5, 7 and 60 have been withdrawn from further consideration. The restriction/election requirement has been made FINAL.
3. Action on the merits of 8-11, 46, 59, 61-85 follows:
4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 8-11, 46-59 and 61-85 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims of U.S. Patent No. 18-42. Although the conflicting claims are not identical, they are not patentably distinct from each other because both inventions claim a vessel comprising a reaction chamber which includes a porous insert within the reaction chamber the porous insert has a mean porosity less than 1 mm and a mass transport distance no greater than 3 mm, which broadly reads on a microchannel reactor which includes a reaction chamber and a porous metal catalytic substrate disposed within the reaction chamber. The porous insert as claimed in the '975 application includes a porous metal support, a buffer layer an interfacial layer and a catalytic active layer. However the difference between the instant invention and that of the '975 patent is that within the vessel is included a reaction chamber and a heat transfer chamber which is thermal communication with the reaction chamber. The claims in both the instant invention and that of the '975 patent are drafted with comprising language and to include a heat transfer chamber in the reactor of the instant invention would have been obvious to one having ordinary skill in the art because with the "open language" to add or eliminate the

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element and its intended function is obvious to one having ordinary skill in the art at the time the invention was made.

6. Claims 8-11, 46-59 and 61-85 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of U.S. Patent No. 6,98,363. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the instant invention and that of the '363 patent claim a microchannel reactor having at least one wall defining a bulk flow path through which a reactant can pass the channel includes a catalyst structure which includes a porous material having a porosity that has a length, width and thickness that permits molecular diffusion therein. Although, the reactor of the '363 patent does not recites that the porous metal support has an average pore size of 1-1000 microns it would have been obvious to one having ordinary skill in the art that although not implicitly claimed, the recitation "that porous material having a porosity that permits molecular diffusion would lend itself to the ordinary artisan that the porosity could be reasonably be construed to be within the range as claimed by applicant based on the size of the molecules of gas being reacted within the microchannel thus rendering the invention as a whole obvious to one having ordinary skill in the art at the time the invention was made.

7. Claims 46-59 and 61-85 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 6,750,258. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the instant invention and that of the '258 patent

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teach a method of making a reactor which includes providing a microchannel reactor with a catalyst structure which includes disposing on a porous support a buffer layer, interfacial layer and a catalyst. The difference in inventions is that the microchannel reactor and catalyst, which is employed, is generic whereas in the '258 patent the microchannel reactor includes making a reaction chamber which is specifically designed for conducting Fischer-Tropsch reactions, in the instant application the microchannel reactor can be used for a number of different reactions which can include F-T reactions. Most importantly, is that in both inventions the claims are drafted to a process which passes on reactant into a reaction chamber, the reaction chamber includes a porous metal support, a buffer layer and an interfacial layer and catalytic active layer. IN the '258 patent applicant claims that the catalyst structure comprises a porous support having a pore size of at least about 0.1 microns which reads on a porosity of 0.1 microns or greater which would obviously read on applicant's range for porosity of 1 micron to 1000 microns. It would have been obvious to one having ordinary skill in the art to provide that the method of making a F-T type microchannel reactor including the catalyst structure which includes a porous support, a buffer layer, a porous interfacial layer and a F-T catalyst would read on the apparatus as claimed in the instant invention and to select the specific type of catalyst where a broad catalyst structure has been taught in a microchannel reactor to include catalyst which are other than F-T catalysts would have been obvious to one having ordinary skill in the art at the time the invention was made.

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8. In order to expedite prosecution on the merits, in claim 8, applicant is requested to draft the microchannel apparatus which includes the already patented catalyst such as has been amended in claim 5, i.e., claim 8 should recite that the microchannel apparatus comprising a connection between at least two microchannels wherein disposed within the microchannel is a catalyst comprising a porous metal support a buffer layer, an interfacial layer, and a catalytically active layer on the surface; wherein the porous metal support has an average pore size of from 1 micron to 1000 micron and wherein the porous metal support is selected from the group consisting of foam, felt and wad. This change is required because applicant has already received patents on the catalyst, method of making the catalyst as well as the apparatus, which is a microchannel reactor, which includes the same catalyst structure but used for F-T reactions. There are also other patents to methods, which include the catalyst structure as claimed by applicant, which has been reviewed by the examiner. Applicant is strongly urged to amend the claims as suggested by the examiner to move prosecution along. Applicant is reminded that it has already been admitted in the specification that the microchannel reactor is old and Wegeng et al. USP is the closest art to applicant microchannel reactor. The microchannel reactor is a catalytic microchannel reactor but does not claim thickness etc. as claimed. Applicant is encouraged not to argue that Wegeng et al. does not teach the buffer layer etc. The buffer layer as claimed by applicant is a metal oxide layer, which is a support layer for most catalytic material, and there is novelty in merely a thickness within the microchannel. Applicant is strongly

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encouraged to contact the examiner if any questions remain regarding how to amend the claims with the properly and timely executed terminal disclaimer.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



N. Bhat
Primary Examiner
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